

Data Analysis Process Quiz

Match the following terms with the appropriate definition

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|-----------------------------------|---|
| 1. Population | a. Individual Observations are numerical(quantitative) in nature |
| 2. Sample | b. A table that displays frequencies, and sometimes relative frequencies, for each of the possible values of a categorical variable |
| 3. Descriptive Statistics | c. A graph of a frequency distribution for a categorical data set. Each category is represented by a bar, and the area of the bar is proportional to the corresponding frequency or relative frequency. |
| 4. Inferential Statistics | d. Possible values form an entire interval along the number line. |
| 5. Categorical Data | e. Possible values are isolated points along the number line. |
| 6. Numerical Data | f. Numerical, graphical, and tabular methods for organizing and summarizing data. |
| 7. Discrete Numerical Data | g. The entire collection of individuals or measurements about which information is desired. |
| 8. Continuous Numerical Data | h. A part of a population selected for study. |
| 9. Univariate Data | i. Methods for generalizing from a sample to a population. |
| 10. Bivariate Data | j. Observations that consist of one response or value. |
| 11. Multivariate Data | k. A graph of numerical data in which each observation is represented by a dot on or above a horizontal measurement scale. |
| 12. Frequency Distribution(Table) | l. Each observation consists of two responses or variables. |
| 13. Bar Chart | m. Individual observations are categorical responses |
| 14. Dot Plot | n. Each observation consists of more than two responses or values. |

15. The report “Testing the Waters 2009” (www.nrdc.org) included information on the water quality at the 82 most popular swimming beaches in California. Thirty-eight of these beaches are in Los Angeles County. For each beach, water quality was tested weekly and the data below are the percent of the tests in 2008 that failed to meet water quality standards.

Los Angeles County

32	4	6	4	4	7	4	27	19	23	19	13	11
19	9	11	16	23	19	16	33	12	29	3	11	6
22	18	31	43	17	26	17	20	10	6	14	11	

Other Counties

0	0	0	2	3	7	5	11	5	7	15	8	1
5	0	5	4	1	0	1	1	0	2	7	0	2
2	3	5	3	0	8	8	8	0	0	17	4	3
7	10	40	3									

- Construct a dotplot of the percent of tests failing to meet water quality standards for the Los Angeles County beaches. Write a few sentences describing any interesting features of the dotplot.
- Construct a dotplot of the percent of tests failing to meet water quality standards for the beaches in other counties. Write a few sentences describing any interesting features of the dotplot.
- Based on the two dotplots from above, describe how the percent of tests that fail to meet water quality standards for beaches in Los Angeles county differs from those of other counties.

16. The U.S. Department of Education reported that 14% of adults were classified as being below a basic literacy level, 29% were classified as being at a basic literacy level, 44% were classified as being at an intermediate literacy level, and 13% were classified as being at a proficient level.
- Is the variable literacy level categorical or numerical?
 - Would it be appropriate to display the given information using a dotplot? Explain why or why not?
 - Construct a bar chart to display the given data on literacy level.
17. The Computer Assisted Assessment Center at the University of Luton published a report titled “Technical Review of Plagiarism Detection Software” The authors of this report asked faculty at academic institutions about the extent to which they agreed with the statement “Plagiarism is a significant problem in academic institutions.” The responses are summarized in the accompanying table. Construct a bar chart for the data.

<u>Response</u>	<u>Frequency</u>
Strongly Disagree	5
Disagree	48
Not Sure	90
Agree	140
Strongly Agree	39

18. The article “Just How Safe Is That Jet?” gave the following relative frequency distribution that summarized data on the type of violation for fines imposed on airlines by the Federal Aviation Administration

<u>Type of Violation</u>	<u>Relative Frequency</u>
Security	.43
Maintenance	.39
Flight Operations	.06
Hazardous Materials	.03
Other	.09

- Use this information to construct a bar chart for the type of violation.
- Use this information to construct a pie graph for the type of violation.